

## **IN THE SPECIFICATIONS**

Please amend paragraph [0019] as indicated:

[0019] The present invention is best understood with reference to the following figures in which like numerals refer to like elements, and in which:

Fig. 1 depicts diagrammatically an NMR logging tool in a borehole;

Fig. 3 shows an exemplary configuration of magnets, antenna and shield suitable for use with the present invention,

Figs. 3z and 3b shows simulated echo trains using a pulse sequence of the present invention for two different B pulse rotation angles; and

Figs. 4a and 4b show the result of applying the diffusion editing pulse sequence with flip angles of 180° and 135°; and

Figs. 4a 5a and 4b 5b schematically illustrate operations in the method of the present invention.

Please amend paragraph [0039] as indicated:

[0039] Turning now to ~~Figs. 4a and 4b~~ Figs. 5a and 5b, an exemplary flow chart illustrating the method of the present invention is shown. The nuclear spins in a region of investigation of the earth formation are polarized **401**. Spin echo signals are then produced using a pulsed RF signal **403**. In one embodiment of the invention, the spin echo signals are produced using the modified CPMG pulse sequence denoted by **eqn. (20)**, i.e., with a B pulse flip angle of less than  $180^\circ$ . If a reduced B pulse flip angle is used, then amplitude corrections are applied **405** as discussed above and shown in *Reiderman* '153 and in *Reiderman* '493 application. In another embodiment of the invention, the B pulse flip angle is taken as  $180^\circ$ . In this case, **405** can be skipped. In either case, the value of TE is chosen to be as short as possible to minimize the effect of diffusion on the relaxation process. Values of TE within the range of 0.5ms – 2.0 ms are preferred. In yet another embodiment of the invention, the pulse sequence of **eqn. (21)** or **eqn. (21a)** is used, i.e., wherein a modified CPMG sequence follows an inversion recovery sequence or a driven equilibrium sequence.